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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,549	11/21/2001	Gyula Vigh		2580

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EXAMINER

OLSEN, KAJ K

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/990,549

Applicant(s)

GYULA VIGH

Examiner

Kaj Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other:

## DETAILED ACTION

### *Information Disclosure Statement*

1. One of the references provided in the Information Disclosure Statement was crossed off because applicant had already listed that patent earlier in the statement.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. With respect to claims 1, 15, 16, 18-21 and 23-25, it is unclear how to interpret the limitations calling for "good buffering capacity" or "adequate conductivity". What would one possessing ordinary skill in the art reasonably construe as being either a good buffering capacity or an adequate conductivity?

5. In claims 1, 3 and 15, applicant specifies that the isoelectric gateway prevent conductive mixing between the gateway and its environment. However, because the applicant has not defined anything about the "environment" (and in claims 1 and 3, the environment is only the intended use of the gateway), how would one possessing ordinary skill in the art know whether a specified structure element prevents convective mixing or not? If applicant wishes to define structure based on its function, the metes and bounds of that function must be explicitly set forth.

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6. It is entirely unclear how to interpret claim 2. Claims 1 and 2 are drawn to structure and should be defined based on what that structure is and not how it functions. Moreover, what does it mean to be functionally equivalent to a isoelectric membrane? Clarification is requested.
7. Claim 3 appears to be redundant because its limitations are already present in claim 1.
8. Claim 13 is grammatically awkward. Moreover, the claim only defines intended use of the isoelectric substance.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5, 7, 9 and 12-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bier et al (USP 4,204,929).
11. With respect to the claims as best understood, Bier discloses an isoelectric gateway that comprises a number of ion-permeable barriers 52-60 any number of which would read on the specified first and second ion-permeable barriers that are a predetermined distance apart from each other (col. 8, lines 11-51). Between each of the various ion-permeable barriers are isoelectric substances (col. 1, lines 28-46) and these isoelectric substances would presumably constitute materials having “good buffering capacity” and “adequate conductivity” at their characteristic pI values giving this indefinite claim language its broadest reasonable interpretation. With respect to the barriers preventing convective mixing, it would appear that

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applicant's claims 4-8 evidence that any number of barrier materials including non-ionic membranes and filter paper would prevent convective mixing and Bier teaches the use of both (col. 7, lines 32-65). In addition, see col. 4, lines 4-6 and col. 5, lines 38-42.

12. With respect to the size restrictions, see col. 7, lines 48-52.

13. With respect to the claimed pI values, see the pH values in table I. These pHs establish the pI values for the various isoelectric substances.

14. With respect to whether or not the isoelectric substance remains stationary or not, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability. However, see paragraph bridging cols. 9 and 10.

15. With respect to the method of claim 15 (those limitations not covered above), see col. 3, lines 9-23.

16. With respect to claim 16 (those limitations not covered above), Bier also discloses the presence of first and second electrolyte chambers (19,20) and numerous sample chambers (formed by membranes 52-60) and any number of these formed chambers would read on the claimed first and second chambers of the claims. The various membranes (or barriers 15 or 16) also constitute the claimed first and second ion-permeable barriers or the first and second selective barriers (i.e. the barriers effectively selective based on the isoelectric point of the sample being analyzed). Bier further discloses means for communicating first and second electrolytes to the first and second electrolyte chambers and for communicating first and second fluids to the first and second sample chambers (paragraph bridging cols. 9 and 10). Bier also discloses a means for applying a selected electric potential to cause migration through the ion permeable membranes (col. 10, lines 12-15).

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17. With respect to a pH gradient, see Table I.
18. With respect to the various claimed third, fourth, fifth and/or six barriers (or second or third isoelectric gateways), Bier discloses a total of 9 different barriers 52-60 which are ion-permeable and formed isoelectric gateways. In addition, Bier also discloses two specifically ion-permeable barriers 15 and 16. Finally, col. 7, lines 32 and 33 indicates that more barriers can even be added (thereby forming more isoelectric gateways).
19. With respect to claims 21-25, see rejections above for claims 1, 15 and 16 above.

*Claim Rejections - 35 USC § 103*

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bier '929 in view of Perry et al (USP 5,087,338).
22. Bier set forth all the limitations of the claim, but did not explicitly recite the use of the set forth groups. Perry teaches in an alternate electrophoresis apparatus that suitable membranes can be constructed from cellulose esters and polysulfones (col. 7, lines 60-65). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Perry for the apparatus of Bier because the substitution of one known membrane material for another requires only routine skill in the art.

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23. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bier '929 in view of Dubrow (USP 5,164,055).

24. Bier set forth all the limitations of the claim, but did not explicitly recite the use of a frit for forming ion-permeable barriers. Dubrow teaches in an alternate isoelectric focusing apparatus that glass frits are a known material for controlling fluid movement across a barrier (col. 4, lines 3-5 and col. 10, lines 52-62). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Dubrow for the apparatus of Bier because frits are a known barrier material and the substitution of one known barrier material for another requires only routine skill in the art.

25. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bier '929 in view of Martin et al (USP 4,243,507).

26. Bier set forth all the limitations of the claim, but did not explicitly recite the use of an isoelectric substance that is a combination of a weak acid and strong base (or strong acid and weak base). Martin discloses in an alternate isoelectric device that the most convenient means for achieving various pHs for each isoelectric compartment is to utilized a combination of a weak acid and strong base (or a strong acid and weak base) (col. 4, lines 15-29). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Martin for the apparatus of Bier because the set forth acid and base combinations are the most convenient means for achieving selective pHs for isoelectric compartments.

27. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bier '929 in view of WO 92/15,870 (hereafter "WO '870").

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28. Bier set forth all the limitations of the claim but did not explicitly recite the use of an isoelectric substance from the claimed group. However, WO '870 teaches that polyamino-polycarboxylic acid is a conventional material utilized for forming an isoelectric substance (p. 2, line 25 through p. 3, line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of WO '870 for the apparatus of Bier because the substitution of one known isoelectric substance for another requires only routine skill in the art.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (703) 305-0506. The examiner can normally be reached on Monday through Thursday from 7:00 AM-4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached at (703) 308-3322.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing of your papers. The fax number for regular communications is (703) 305-3599 and the fax number for after-final communications is (703) 305-5408.



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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Kaj Olsen', with a long horizontal flourish extending to the right.

Kaj K. Olsen  
Patent Examiner  
AU 1753